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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,595	12/03/2003	Jae-Jin Lyu	21C-0334	4849
23413	7590	12/10/2007	EXAMINER	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			CHEN, WEN YING PATTY	
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/725,595	LYU, JAE-JIN	
Examiner	Art Unit		
W. Patty Chen	2871		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 19 September 2007.

2a)  This action is **FINAL**.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 2-6 and 8-35 is/are pending in the application.  
4a) Of the above claim(s) 8-32 is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 2-6 and 33-35 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 03 December 2003 is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)      4)  Interview Summary (PTO-413)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)      Paper No(s)/Mail Date. \_\_\_\_ .  
3)  Information Disclosure Statement(s) (PTO/SB/08)  
    Paper No(s)/Mail Date. \_\_\_\_ .      5)  Notice of Informal Patent Application  
6)  Other: \_\_\_\_ .

## DETAILED ACTION

### *Response to Amendment*

Applicant's Amendment filed on Sept. 19, 2007 has been entered. Claims 2-6 and 8-35 remain pending in the current application, but claims 8-32 are withdrawn from consideration.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 2-6 and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishiyama et al. (US 2002/0140588) in view of Jones et al. (US 6124907) further in view of Gunning, III et al. (US 5638197).

With respect to claim 5: Nishiyama et al. disclose in Figure 1 a liquid crystal display apparatus comprising:

a first transparent substrate (element 134);  
a second transparent substrate (element 111) facing the first transparent substrate;  
a liquid crystal layer (element 120) interposed between the first and the second substrates; and  
a retardation layer (element 116) interposed between the first and second transparent substrates, and compensating phase difference of light that passes through the liquid crystal layer; and  
a color filter layer (element 113) disposed on the second transparent substrate, wherein the retardation layer is disposed on the color filter layer.

Nishiyama et al. fail to specifically disclose that the retardation layer has a function of a biaxial film and that the retardation layer is disposed directly on the color filter layer.

However, Jones et al. disclose in Column 9 lines 62-65, Column 12 lines 36-52 and Figures 1 and 9 a liquid crystal display apparatus comprising a retardation layer (element 17) having a function of a biaxial film interposed between the first and second transparent substrate and Nishiyama et al. disclose in Paragraph 0054 that the retardation layer can be disposed in any place between the common electrode and the transparent substrate, thus, it is obvious that the retardation layer can be disposed directly on the color filter layer.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal apparatus as taught by Nishiyama et al. wherein the retardation layer has a function of a biaxial film as taught by Jones et al., since biaxial retardation films exhibit better display contrast and wider viewing angles, as taught by Gunning, III et al. (Abstract) and wherein the retardation layer is disposed anywhere between the common

electrode and the transparent substrate as taught by Nishiyama et al., since Nishiyama et al. teach that by placing the retardation layer between the common electrode and the transparent substrate has the advantage of diminishing the leakage of light (Paragraph 0054).

As to claims 2-4: Nishiyama et al. disclose all of the limitations set forth in claim 5, but fail to specifically disclose the composition of the retardation layer.

However, Jones et al. teach the use of internal retarder/polarizer corresponding to Figures 1 and 9, wherein the retardation layer comprises a cholesteric liquid crystal polymer including reactive mesogen mixture (Column 12, lines 39-52).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display apparatus as taught by Nishiyama et al. wherein the retardation layer has the properties as taught by Jones et al., since Jones et al. teach that having such retarder/polarizer helps in improving contrast ratios in the display due to the minimization of the de-polarizing of color filters (Abstract).

With respect to claim 6: Nishiyama et al. disclose in Figure 1 a liquid crystal display apparatus comprising:

- a first transparent substrate (element 134);
- a second transparent substrate (element 111) facing the first transparent substrate;
- a liquid crystal layer (element 120) interposed between the first and the second substrates; and
- a retardation layer (element 116) interposed between the first and second transparent substrates, and compensating phase difference of light that passes through the liquid crystal layer;

a color filter layer (element 113) disposed on the second transparent substrate; and  
a protection layer (element 114) disposed directly on the color filter layer,  
wherein the retardation layer is disposed on the protection layer.

Nishiyama et al. fail to specifically disclose that the retardation layer has a function of a biaxial film and that the retardation layer is disposed directly on the protection layer.

However, Jones et al. disclose in Column 9 lines 62-65, Column 12 lines 36-52 and Figures 1 and 9 a liquid crystal display apparatus comprising a retardation layer (element 17) having a function of a biaxial film interposed between the first and second transparent substrate and Nishiyama et al. disclose in Paragraph 0054 that the retardation layer can be disposed in any place between the common electrode and the transparent substrate, thus, it is obvious that the retardation layer can be disposed directly on the protection layer.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal apparatus as taught by Nishiyama et al. wherein the retardation layer has a function of a biaxial film as taught by Jones et al., since biaxial retardation films exhibit better display contrast and wider viewing angles, as taught by Gunning, III et al. (Abstract) and wherein the retardation layer is disposed anywhere between the common electrode and the transparent substrate as taught by Nishiyama et al., since Nishiyama et al. teach that by placing the retardation layer between the common electrode and the transparent substrate has the advantage of diminishing the leakage of light (Paragraph 0054).

As to claims 33-35: Nishiyama et al. disclose all of the limitations set forth in claim 6, but fail to specifically disclose the composition of the retardation layer.

However, Jones et al. teach the use of internal retarder/polarizer corresponding to Figures 1 and 9, wherein the retardation layer comprises a cholesteric liquid crystal polymer including reactive mesogen mixture (Column 12, lines 39-52).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display apparatus as taught by Nishiyama et al. wherein the retardation layer has the properties as taught by Jones et al., since Jones et al. teach that having such retarder/polarizer helps in improving contrast ratios in the display due to the minimization of the de-polarizing of color filters (Abstract).

#### *Response to Arguments*

Applicant's arguments filed on Sept. 19, 2007 have been fully considered but they are not persuasive.

Applicant first argues that the polarizer layer 17 shown in Figure 1 and the polarizer/retarder structure as shown in Figure 9 are two separate structures, therefore, the polarizer/retarder is not a replacement or an equivalent substitute for the polarizer 17. Applicant further argues that if such a polarizer/retarder structure were to be substituted for polarizer 17, the resulting structure would include multiple and redundant alignment layers and substrates.

However, the argument is not persuasive. The substrate 101 in Figure 9 is analogous to substrate 29 of Figure 1 and that the alignment layer 102 is analogous to alignment layer 19, such that the polarizer 17 would be analogous to the polarizer/retarder, which comprises of the combination of layers 103, 104 in Figure 9. Therefore, there are no multiple and redundant alignment layers and substrates that would make the resulting device inoperable or complicated,

as suggested by Applicant. More specifically, Jones discloses in Column 12 lines 36-52 that the polarizer/retarder is formed because by adding a chiral dopant to the RM 257 layer results in a retardation or optical compensation layer, hence, the polarizer/retarder would have the functionality of compensating phase difference of light that passes through the liquid crystal layer, thus, the rejections are maintained.

#### *Relevant Prior Art*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Abileah et al. (US 6169590) disclose in Figure 19 of forming an internal biaxial retardation layer (elements 67, 68 and 79 combined; Column 26, lines 51-53) directly on a color filter layer (elements 42, 44 and 46 combined).

#### *Conclusion*

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to W. Patty Chen whose telephone number is (571)272-8444. The examiner can normally be reached on 8:00-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

W. Patty Chen  
Examiner  
Art Unit 2871

WPC  
11/29/07

  
ANDREW SCHECHTER  
PRIMARY EXAMINER